THE NOMENCLATURE AND SYSTEMATIC POSITIONS OF SOME NORTH AMERICAN FOSSIL AND RECENT MOLLUSKS.

BY JUNIUS HENDERSON.

Pholadomya undata Meek and Hayden (Proc. Acad. Nat. Sci., Phila., VIII, 1856, p. 81), now generally known as *Liopistha* (*Cymella*) *undata*, Cretaceous, Rocky Monntain region, is preoccupied by *P. undata* Dana (Wilkes U. S. Expl. Exped., X, 1849, p. 687, Atlas, Pl. 2, figs. 11, 11 a, 11 b), Carboniferous, Australia. It is unfortunate to have to abandon Meek and Hayden's name for the well-known American species, but the rules of nomenclature require it, so I propose the name *Liopistha* (*Cymella*) *montanensis*, in reference to both the type locality and the geological group from which it was described.

Anodonta parallela White, was described from the Cretaceous of Colorado in 1878 (Hayden Survey, IV, p. 709). Binney used the same name in his Bibliography of North American Conchology, Pt. I, 1863, p. 46, citing Ferussac, "Hyde, in litt." As neither Ferussac nor Binney, so far as I know, ever published any description to accompany that name, White's name will stand.

Unio rectoides White, Tertiary, Utah (U. S. Geol. Surv., Bull. 34, 1886, pp. 11, 15, 21), is preoccupied by *U. rectoides* Whitfield, "Cretaceous," New Jersey (U. S. Geol. Surv., Monog., Vol. 9, 1885, pp. 250, 258). As Pilsbry and others have shown, Whitfield's *rectoides* is itself a synonym of *Lampsilis recta* (Lam.), and is from Quaternary deposits, instead of Cretaceous. Under the circumstances it seems too bad to abandon White's name, but the rules adopted in the interest of ultimate stability of nomenclature require it. I propose for it the name *Unio whitei*. It should likely be removed to some other genus.

Unio browni Whitfield, Cretaceous, Montana (Bull. Am. Mus. Nat. Hist., XIX, 1903, p. 485), is preoccupied by *U. brownii* Lea, recent, Asia (Proc. Acad. Nat. Sci., VIII, 1856, p. 95), so Pilsbry renamed it *Parreysia barnumi* (NAUTILUS, XVIII, 1904, p. 12), a fact that seems to have been overlooked by subsequent writers, which is likely to be the case where new names

are proposed in brief notices of publications in reviews. Even if Conrad's Africo-Asiatic genus *Parreysia* is to be considered valid, the reference to it of Whitfield's species seems to me incorrect. In the present unsettled condition of the classification and nomenclature of recent Unionidæ, it is doubtful whether any good purpose is served by removing the fossil forms from the genus *Unio*, though perhaps few, if any, would be placed there if we had sufficient knowledge of the family, and had the anatomy and perfect shells with which to work.

Melania (*Goniobasis?*) *sculptilis* Meek, Tertiary, Hot Springs Mts., "Idaho" [Nevada] (Proc. Acad. Nat. Sci., Phila., XXII, 1870, p. 58), is preoccupied by *Melania sculptilis* Lea, recent, Tennessee (Transac. Philos. Soc., X, 1853, p. 297; Tryon, L. & F.-W. Shells, Pt. 1, 1873, p. 297), so Meek's name must be abandoned, but I refrain from renaming it until further investigation, for the following reasons: Meek himself later expressed a doubt as to whether *sculptilis* and *subsculptilis*, from the same locality and position, are distinct, and also suggested that it is not distinct from *M. taylori* Gabb. Furthermore, Dr. T. W. Stanton informs me that on Meek's separate copy of his paper in which *sculptilis* and *subsculptilis* are described is the following penciled note in Meek' s handwriting: " Prob. the same named *M. decurata* Con. Am. Jour. Conch. 6, p. 200, Ap. 1871, and both are prob. synonyms of a species descr. by Gabb in Cal. Report." The reference to Conrad's *decurata* probably means *decursa*, which is said to have come from Colorado. The figure does not look like any of the species mentioned. Gabb's species to which he refers is *M. taylori* (Paleont. Cali., II, 1869, p. 13, Pl. 2, fig. 21), the figure of which is much more slender than Meek's figures, but perhaps because drawn from a more mature specimen, as Meek suggests. If Meek's *M. sculptilis* is the same as any or all of the other three, then no new name is needed. I believe it is identical with *subsculptilis*.

Melania convexa var. *impressa* Meek and Hayden, "Tertiary" [Cretaceous], Montana (Proc. Acad. Nat. Sci., Phila., IX, 1857, p. 138), is preoccupied by *Melania impressa* Lea (Proc. Philos. Soc., II, 1841, p. 83; Transac., IX, p. 19; Obs., IV, p. 19). Hence Meek and Hayden's name must be abandoned,

but as their *impressa* is probably not sufficiently distinct from their *convexa* to deserve a name, I propose the use of that name *convexa*, and do not rename it. Probably all should be referred to *Goniobasis*, as is usually done.

Cerithium tenerum Hall was described from the western Tertiary in 1845 (Fremont's Expl. Exped., Ore. & Cali., p. 308, Pl. 3, fig. 6), and was transferred to *Goniobasis* by Meek in 1870. Meantime, *Melania tenera* Anthony, was published by Reeve in 1861 (Monog. *Melania*, sp. 407), and was transferred to *Goniobasis* by Tryon in 1872 (L. & F.-W. Shells, Pt. 1, p. 264). This gives Hall's species priority, and Anthony's should be renamed unless it has already been renamed or is considered a synonym of something else. A revision of the group including *G. tenera* Anth., based upon adequate material, is desirable.

Melania multistriata Meek and Hayden, now known as *Campeloma multistriata*, was described in 1856 from the Fort Union Tertiary (Proc. Acad. Nat. Sci., Phila., VIII, 1856, p. 124). Wheatley used the same name in 1845, attributing it to Lea (Cat. of Shells of U. S., p. 147). His catalogue was a list, without descriptions, and I do not find that Lea or anyone else ever used that specific name in either *Melania* or *Campeloma*. Hence Meek and Hayden's name should stand. Dr. Pilsbry writes that he finds no specimens bearing such a name in Wheatley's collection in the Academy of Natural Sciences at Philadelphia. Dr. Bryant Walker, in a letter just received, says: "Neither Wheatley nor Lea ever described a species as *Melania multistriata*. The use of that name by both of them seems to be owing to a *lapsus calami* of Lea, who in his remarks on his *M. buddii* compared it with 'the striate variety of Mr. Say's *virginica*, which he called *multistriata*.' Say's species was *M. multilineata*, and Tryon makes the correction on p. 295 of his monograph."

Paludina multilineata Meek and Hayden, Fort Union Tertiary, Fort Clarke, North Dakota, was described in 1856 (Proc. Acad. Nat. Sci., Phila., VIII, p. 120), and renamed by the same authors *Viviparus nebrascensis* (Proc. Acad. Nat. Sci., Phila., XII, 1860, p. 430), because they said *multilineata* was preoccupied in *Paludina* by Say, 1829. Later, after the Meek and

Hayden species had been removed to *Campeloma*, Meek restored the first name, calling it *Campeloma multilineata*, in accordance with his custom, a practice forbidden by modern rules of nomenclature. Since then, everyone has followed Meek. A difficult question as to what constitutes a description is involved, but I believe the second specific name should be used and that the name should be written *Campeloma nebrascensis* (Meek and Hayden). Say's *Paludina multilineata*, now placed in *Viviparus*, was described after a fashion by indicating the species to which he referred. He says: "I described it nearly four years since under the name *multilineata* [evidently in unpublished manuscript]; but recently, being about to publish it, on a more attentive examination and comparison with a specimen of the *elongata* from Calcutta, I have concluded that it varies from that specimen only in having the umbilicus a little smaller." Tryon, after quoting this, says: "I have compared the original specimen with shells from Calcutta, and find that it differs as little from them, as they do from each other. It is smaller than the foreign specimens, but I think a larger native shell was mislaid, or placed accidentally among the foreign ones, in the same collection; so that, rather than commit an error, I have chosen the reputed American example for my illustration. If this is not the *bengelensis* of Lamarck, it must have the name given to it by Say; that of Swainson [*elongata*] having been previously given to a fossil species." It is plain then, that the name *multilineata* was definitely applied to the Florida species by both Say and Tryon, provided it proved distinct from the Asiatic species, which it probably is, and the designation was accompanied by a figure of the Florida species and a brief description by comparison with the Asiatic species. All this appears to me to preclude the use of the name *multilineata* for Meek and Hayden's species.

Helix occidentalis Meek and Hayden, Judith River, Cretaceous, Montana, is another instance of the same kind. The name was changed by Meek to *nebrascensis*, because *occidentalis* was preoccupied in *Helix* by Recluz. Then Meek, in removing the Cretaceous species to *Hyalina*, restored the original name, in accordance with his custom, but contrary to present usage. From

the figures it is impossible to definitely ascertain to what genus either this species or *H. evansi* M. & H., from the same locality and formation, belong, but whatever the genus, the name *occidentalis* should not be used. As to *H. evansi*, which is based upon poor and probably immature material, we agree with Dr. Pilsbry, who writes: "It is better to leave uncertain shells of this kind in '*Helix*,' as uncertain generic reference may lead some one to baseless deductions. Paleontology is full of the most reckless generic references." He also calls attention to the fact that *H. occidentalis* Recluz, is now considered a *Hygromia*, ranking as a variety, but that does not restore Meek and Hayden's first name for their species.

Planorbis vetulus Meek and Hayden, was described from the Tertiary of South Dakota in 1860 (Proc. Acad. Nat. Sci., Phila., XII, pp. 175, 431). In 1864 (Smithsonian Check-list of Invertebrate Fossils of North America—Miocene, p. 13) Meek called it *P. vetustus*, since which time the latter name has been almost universally used, though no reason was given for the change. The change was likely inadvertent, though possibly deliberate, as authors in those days did not always hesitate about changing names to suit their own notions. Unless *vetulus* is preoccupied, of which I have found no evidence, it must stand as the name for this species.

A somewhat similar case is that of *Campeloma vetula* Meek and Hayden, which was first described as *Paludina vetula*, and afterwards cited by the same authors as *P. vetusta* and changed to *Vivipara vetusta*, but fortunately in that case the original name has been used by most subsequent authors, though White (U. S. Geol. Surv., Bull. 128, p. 77) made the curious mistake of supposing that *V. vetusta* and *C. vetula* are distinct species.

Limnæa tenuicosta Meek and Hayden, Eocene, near Fort Union, N. D., was described in 1856 (Proc. Acad. Nat. Sci., Phila., VIII, p. 119). In 1860 the same authors (Proc. Acad. Nat. Sci., Phila., XII, p. 431) cited the original description but spelled the name *tenuicostata*, without offering any reason, and the majority of subsequent writers have used the latter name, instead of the former.